JOURNAL OF BIOMEDICAL MATERIALS RESEARCH

Volume 54 Contents 2001

January, 2001
Volume 54
Issue No. 1

1 Biodegradable Dextran-Polylactide Hydrogel Network and Its Controlled Release of Albumin
Yeli Zhang and Chih-Chang Chu
Published online 25 October 2000

12 *In Situ* Complement Activation by Polyethylene Wear Debris
David H. DeHeer, James A. Engels, Aaron S. DeVries, Robert H. Knapp, and John D. Beebe
Published online 25 October 2000

20 Hydrogen Desorption from Sand-Blasted and Acid-Etched Titanium Surfaces after Glow-Discharge Treatment
B.-O. Aronsson, B. Hjörvarsson, L. Frauchiger, M. Taborelli, P.-H. Vallotton, and P. Descouts
Published online 25 October 2000

30 Effects of MA 956 Superalloy and α-Alumina Particles on Some Markers of Human Osteoblastic Cells in Primary Culture
A. M. Rodrigo, M. E. Martínez, P. Martínez, M. L. Escudero, J. Ruíz, L. Saldaña, L. Gómez-García, L. Fernández, I. del Valle, and L. Munuera
Published online 26 October 2000

37 Two-Dimensional Manipulation of Differentiated Madin–Darby Canine Kidney (MDCK) Cell Sheets: The Noninvasive Harvest from Temperature-Responsive Culture Dishes and Transfer to Other Surfaces
Ai Kushida, Masayuki Yamato, Akihiko Kikuchi, and Teruo Okano
Published online 27 October 2000

47 The Different Behaviors of Skeletal Muscle Cells and Chondrocytes on PEGT/PBT Block Copolymers are Related to the Surface Properties of the Substrate
Maria Papadaki, Tahir Mahmood, Pavan Gupta, Menno B. Claase, Dirk W. Grijpma, Jens Riesle, Clemens A. van Blitterswijk, and Robert Langer
Published online 27 October 2000

59 Preparation and Characterization of Chitin Beads as a Wound Dressing Precursor
Nealda Leila Binte Muhammad Yusof, Lee Yong Lim, and Eugene Khor
Published online 30 October 2000

69 Influence of Inflammatory Cells and Serum on the Performance of Implantable Glucose Sensors
M. Gerritsen, J. A. Jansen, A. Kros, D. M. Vriezema, N. A. J. M. Sommerdijk, R. J. M. Nolte, J. A. Lutterman, S. W. F. M. Van Hövell, and A. Van der Gaag
Published online 30 October 2000

76 Calcium Alginate Gel: A Biocompatible and Mechanically Stable Polymer for Endovascular Embolization
Timothy A. Becker, Daryl R. Kipke, and Tedd Brandon
Published online 30 October 2000

87 Mechanical Properties of the Dentinoenamel Junction: AFM Studies of Nanohardness, Elastic Modulus, and Fracture
G. W. Marshall, Jr., M. Balooch, R. R. Gallagher, S. A. Gansky, and S. J. Marshall
Published online 30 October 2000

96 Characterization and Stability of Hydroxyapatite Coatings Prepared by an Electrodeposition and Alkaline-Treatment Process
Yong Han, Tao Fu, Jian Lu, and Kewei Xu
Published online 6 November 2000

102 Amphiphilic Derivatives of Sodium Alginate and Hyaluronate for Cartilage Repair: Rheological Properties
S. Pelletier, P. Hubert, E. Payan, P. Marchal, L. Choplin, and E. Dellacherie
Published online 3 November 2000

109 *In Vitro* Bioactivity of Aerosol-Gel Deposited TiO_2 Thin Coatings
R. Viitala, J. Simola, T. Peltola, H. Rahiala, M. Linden, M. Langlet, and J. B. Rosenholm
Published online 31 October 2000

115 Photocrosslinkable Polysaccharides for *In Situ* Hydrogel Formation
Kimberly A. Smeds and Mark W. Grinstaff
Published online 1 November 2000

122 Dimethyl 3,3'-Dithiobispropionimidate: A Novel Crosslinking Reagent for Collagen
V. Charulatha and A. Rajaram
Published online 31 October 2000

129 Comparative Study of Biphasic Calcium Phosphate Ceramics Impregnated with rhBMP-2 as Bone Substitutes
Md. Imranul Alam, Izumi Asahina, Kohichi Ohmamiuda, and Shoji Enomoto
Published online 31 October 2000

139 Functionalized Silk-Based Biomaterials for Bone Formation
Susan Sofia, Mary Beth McCarthy, Gloria Gronowicz, and David L. Kaplan
Published online 1 November 2000

February 2001
Volume 54
Issue No. 2

149 Substrate Microtopography Can Enhance Cell Adhesive and Migratory Responsiveness to Matrix Ligand Density
C. S. Ranucci and P. V. Moghe
Published online 8 November 2000

162 Biologically and Chemically Optimized Composites of Carbonated Apatite and Polyglycolide as Bone Substitution Materials
W. Linhart, F. Peters, W. Lehmann, K. Schwarz, A. F. Schilling, M. Amling, J. M. Rueger, and M. Epple
Published online 10 November 2000

172 A Comparative Study of *In Vitro* Apatite Deposition on Heat-, H_2O_2-, and NaOH-Treated Titanium Surfaces
X.-X. Wang, S. Hayakawa, K. Tsuru, and A. Osaka
Published online 9 November 2000

179 Biomaterial Properties and Biocompatibility in Cell Culture of a Novel Self-Inflating Hydrogel Tissue Expander
K. G. Wiese, D. E. H. Heinemann, D. Ostermeier, and J. H. Peters
Published online 13 November 2000

189 Model Systems to Assess the Destructive Potential of Human Neutrophils and Monocyte-Derived Macrophages During the Acute and Chronic Phases of Inflammation
R. S. Labow, E. Meek, and J. P. Santerre
Published online 9 November 2000

198 Alkali- and Heat-Treated Porous Titanium for Orthopedic Implants
S. Nishiguchi, H. Kato, M. Neo, M. Oka, H.-M. Kim, T. Kokubo, and T. Nakamura
Published online 9 November 2000

209 Proliferation and Differentiation Parameters of Human Osteoblasts on Titanium and Steel Surfaces
C. Schmidt, A. A. Ignatius, and L. E. Claes
Published online 9 November 2000

216 Tissue-Engineered Growth of Bone by Marrow Cell Transplantation Using Porous Calcium Metaphosphate Matrices
Y.-M. Lee, Y.-J. Seol, Y.-T. Lim, S. Kim, S.-B. Han, I.-C. Rhyu, S.-H. Baek, S.-J. Heo, J.-Y. Choi, P. R. Klokkevold, and C.-P. Chung
Published online 13 November 2000

224 Performance of a Polyurethane Vascular Prosthesis Carrying a Dipyridamole (Persantin®) Coating on Its Lumenal Surface
Y. B. J. Aldenhoff, F. H. van der Veen, J. ter Woorst, J. Habets,
L. A. Poole–Warren, and L. H. Koole
Published online 14 November 2000

234 Enzyme and Cytokine Effects on the Impaired Onset of the Murine Foreign-Body Reaction to Dermal Sheep Collagen
I. M. S. L. Khouw, P. B. van Wachem, J. A. Plantinga, L. F. M. H. de Leij, and M. J. A. van Luyn
Published online 13 November 2000

241 Morphologic Study and Syntheses of Type I Collagen and Fibronectin of Human Periodontal Ligament Cells Cultured on Poly(Ethylene-co-Vinyl Alcohol) (EVA) with Collagen Immobilization
C. Peng, S. Tsutsumi, K. Matsumura, N. Nakajima, and S.-H. Hyon
Published online 7 November 2000

247 Is There a Chemical Interaction Between Calcium Phosphates and Hydroxypropylmethylcellulose (HPMC) in Organic/Inorganic Composites?
S. V. Dorozhkin
Published online 9 November 2000

256 Sintering Peculiarities for Hydroxyapatite with Different Degrees of Crystallinity
Z. Zyman, I. Ivanov, D. Rochmistrov, V. Glushko, N. Tkachenko, and S. Kijko
Published online 13 November 2000

264 Osmotic Pressure Test: A Simple, Quantitative Method to Assess the Mechanical Stability of Alginate Microcapsules
J. M. Van Raamsdonk and P. L. Chang
Published online 13 November 2000

272 Cell Adhesion Peptide Modification of Gold-Coated Polyurethanes for Vascular Endothelial Cell Adhesion
R. McMillan, B. Meeks, F. Bensebaa, Y. Deslandes, and H. Sheardown
Published online 13 November 2000

284 Engineering New Bone Tissue *In Vitro* on Highly Porous Poly(α-Hydroxyl Acids)/Hydroxyapatite Composite Scaffolds
P. X. Ma, R. Zhang, G. Xiao, and R. Franceschi
Published online 14 November 2000

294 Role of the Cross-Linking Enzyme Tissue Transglutaminase in the Biological Recognition of Synthetic Biodegradable Polymers
E. Verderio, A. Coombes, R. A. Jones, X. Li, D. Heath, S. Downes, and M. Griffin
Published online 14 November 2000

Technical Note

305 A New Type of Surgical Adhesive Made from Porcine Collagen and Polyglutamic Acid
T. Sekine, T. Nakamura, Y. Shimizu, H. Ueda, K. Matsumoto, Y. Takimoto, and T. Kiyotani
Published online 14 November 2000

March 5, 2001
Volume 54
Issue No. 3

311 Effect of Added $NaHCO_3$ on the Basic Properties of Apatite Cement
Youji Miyamoto, Taketomo Toh, Kunio Ishikawa, Tetsuya Yuasa, Masaru Nagayama, and Kazuomi Suzuki
Published online 29 November 2000

320 Porous Bioactive Glass and Glass–Ceramics Made by Reaction Sintering Under Pressure
Weiliang L. Gong, Abdesselam Abdelouas, and Werner Lutze
Published online 29 November 2000

328 Costimulatory Molecule Expression Following Exposure to Orthopaedic Implants Wear Debris
J.A. Bainbridge, P.A. Revell, and N. Al-Saffar
Published online 29 November 2000

335 Polylactide Implants and Bacterial Contamination: An Animal Study
Pierre Mainil-Varlet, Christian Hauke, Véronique Maquet, Gert Printzen, Stephan Arens, Thomas Schaffner, Robert Jérôme, Stephan Perren, and Urs Schlegel
Published online 29 November 2000

344 *In Vitro* Resorption of Three Apatite Cements with Osteoclasts
Tetsuya Yuasa, Youji Miyamoto, Kunio Ishikawa, Masaaki Takechi, Masaru Nagayama, and Kazuomi Suzuki
Published online 1 December 2000

351 Phase Transformations in a Leucite-Reinforced Pressable Dental Ceramic
I.L. Denry, J.A. Holloway, and H.O. Colijn
Published online 30 November 2000

360 Research on Annihilation of Cancer Cells by Glass-Ceramics for Cancer Treatment with External Magnetic Field. I. Preparation and Cytotoxicity
Seung-Han Oh, Se-Young Choi, Yong-Keun Lee, and Kyoung-Nam Kim
Published online 1 December 2000

366 mRNA Expression on Shape-Engineered Endothelial Cells: Adhesion Molecules ICAM-1 and VCAM-1
Shinya Kato, Joji Ando, and Takehisa Matsuda
Published online 30 November 2000

373 Alginate, a Bioresorbable Material Derived from Brown Seaweed, Enhances Enlongation of Amputated Axons of Spinal Cord in Infant Rats
Kazuya Kataoka, Yoshihisa Suzuki, Masaaki Kitada, Katsunori Ohnishi, Kyoko Suzuki, Masao Tanihara, Chizuka Ide, Katsuaki Endo, and Yoshihiko Nishimura
Published online 1 December 2000

385 Western Blotting as a Method for Studying Cell–Biomaterial Interactions: The Role of Protein Collection
Theo G. van Kooten, Christoph L. Klein, and C. James Kirkpatrick
Published online 1 December 2000

390 Root Canal Sealers Cause Cytotoxicity and Oxidative Damage in Hepatocytes
Tsui-Hsien Hunag, Chong-Kuei Lii, and Chia Tze Kao
Published online 1 December 2000

396 Durability of Sodium Sulfate-Treated Polylysine-Alginate Microcapsules
Marcus Darrabie, Brandi Kaye Freeman, William F. Kendall, Jr., Hasan A. Hobbs, and Emmanuel C. Opara
Published online 1 December 2000

400 Effects of A–P Translation and Rotation on the Wear of UHMWPE in a Total Knee Joint Simulator
Keiichi Kawanabe, Ian C. Clarke, Jiro Tamura, Masao Akagi, Victoria D. Good, Paul A. Williams, and Kengo Yamamoto
Published online 1 December 2000

407 Replacement of Segmental Bone Defects Using Porous Bioceramic Cylinders: A Biomechanical and X-ray Diffraction Study
Cong Zhang, Jianxin Wang, Huaizhi Feng, Bin Lu, Zhiming Song, and Xingdong Zhang
Published online 1 December 2000

412 Electrolytic Al_2O_3 Coating on Co-Cr-Mo Implant Alloys of Hip Prosthesis
S.K. Yen and S.W. Hsu
Published online 1 December 2000

419 Effects of an Adhesion Promoter on the Debond Resistance of a Metal–Polymethylmethacrylate Interface
Kevin L. Ohashi, Scott A. Yerby, and Reinhold H. Dauskardt
Published online 1 December 2000

428 Long-Term γ Irradiation Effects on Ultrahigh Molecular Weight Polyethylene
Meng Deng and Shalaby W. Shalaby
Published online 1 December 2000

436 Suitability of Cellulose Molecular Dialysis Membrane for Bioartificial Pancreas: *In Vitro* Biocompatibility Studies
Makarand V. Risbud and Ramesh R. Bhonde
Published online 4 December 2000

445 The Biocompatibility and Osteoconductive Activity of a Novel Hydroxyapatite/Collagen Composite Biomaterial, and its Function as a Carrier of rhBMP-2
Soichiro Itoh, Masanori Kikuchi, Kazuo Takakuda, Yoshihisa Koyama, Hiroko N. Matsumoto, Shizuko Ichinose, Junzo Tanaka, Toshiyuki Kawauchi, and Kenichi Shinomiya
Published online 4 December 2000

454 45S5 Bioactive Glass Surface Charge Variations and the Formation of a Surface Calcium Phosphate Layer in a Solution Containing Fibronectin
Helen H. Lu, Solomon R. Pollack, and Paul Ducheyne
Published online 4 December 2000

March 15, 2001
Volume 54
Issue No. 4

463 Push-Out Testing and Histological Evaluation of Glass Reinforced Hydroxyapatite Composites Implanted in the Tibia of Rabbits
M. A. Lopes, J. D. Santos, F. J. Monteiro, C. Ohtsuki, A. Osaka, S. Kaneko, and H. Inoue
Published online 13 December 2000

470 Novel Adhesion Prevention Membrane Based on a Bioresorbable Copoly(ester-ether) Comprised of Poly-L-Lactide and Pluronic®: *In Vitro* and *In Vivo* Evaluations
T. Yamaoka, Y. Takahashi, T. Fujisato, C. W. Lee, T. Tsuji, T. Ohta, A. Murakami, and Y. Kimura
Published online 11 December 2000

480 Physicochemical Study of Plasma-Sprayed Hydroxyapatite-Coated Implants in Humans
D. E. MacDonald, F. Betts, M. Stranick, S. Doty, and A. L. Boskey
Published online 12 December 2000

491 A New Bioactive Bone Cement: Effect of Glass Bead Filler Content on Mechanical and Biological Properties
S. Shinzato, T. Nakamura, T. Kokubo, and Y. Kitamura
Published online 12 December 2000

501 Tissue Responses Around Polymethylmethacrylate Particles Implanted into Bone: Analysis of Expression of Bone Matrix Protein mRNAs by *In Situ* Hybridization
K. Ohsawa, M. Neo, H. Matsuoka, H. Akiyama, H. Ito, and T. Nakamura
Published online 13 December 2000

509 A Novel Surfactant-Based Immobilization Method for Varying Substrate-Bound Fibronectin
K. Webb, K. D. Caldwell, and P. A. Tresco
Published online 7 December 2000

519 Suppression of Apoptosis in Hepatocytes by Fructose-Modified Dendrimers
M. Kawase, T. Shiomi, H. Matsui, Y. Ouji, S. Higashiyama, Y. Tsutsui, and K. Yagi
Published online 7 December 2000

525 Preparation and Compressive Strength of α-Tricalcium Phosphate/Gelatin Gel Composite Cement
Y. Fujishiro, K. Takahashi, and T. Sato
Published online 12 December 2000

531 Sensitizer Contained in Heat-Decomposed Dye
K. Tomihata, M. Suzuki, H. Sato, and M. Kitagawa
Published online 12 December 2000

540 *In vitro* Studies of Platelet Adhesion on Laser-Treated Polyethylene Terephthalate Surface
M. Dadsetan, H. Mirzadeh, N. Sharifi-Sanjani, and P. Salehian
Published online 11 December 2000

547 Correlations Between Osteocalcin Content, Degree of Mineralization, and Mechanical Properties of *C. Carpio* Rib Bone
M. E. Roy, S. K. Nishimoto, J. Y. Rho, S. K. Bhattacharya, J. S. Lin, and G. M. Pharr
Published online 12 December 2000

554 Nanoindentation Study of Interfaces Between Calcium Phosphate and Bone in an Animal Spinal Fusion Model
L. Guo, X. Guo, Y. Leng, J. C. Y. Cheng, and X. Zhang
Published online 12 December 2000

560 Long-term *In Vivo* Bioactivity and Degradability of Bulk Sol-gel Bioactive Glasses
M. Hamadouche, A. Meunier, D. C. Greenspan, C. Blanchat, J. P. Zhong, G. P. La Torre, and L. Sedel
Published online 13 December 2000

567 Polishing and Coating Carbon Fiber-Reinforced Carbon Composites with a Carbon–Titanium Layer Enhances Adhesion and Growth of Osteoblast-like MG63 Cells and Vascular Smooth Muscle Cells *In Vitro*
L. Bačáková, V. Starý, O. Kofroňová, and V. Lisá
Published online 11 December 2000

579 *In Vitro* Bioactivity and Structural Features of Mildly Heat-Treated Sol-gel-Derived Silica Fibers
T. Peltola, M. Jokinen, S. Veittola, J. Simola, and A. Yli-Urpo
Published online 11 December 2000

591 Observations at the Articular Surface of Hip Prostheses: An Analytical Electron Microscopy Study on Wear and Corrosion
H. K. Koerten, J. J. M. Onderwater, E. W. A. Koerten, F. P. Bernoski, and R. G. H. H. Nelissen
Published online 12 December 2000

597 Evaluation of Plasma Polymer-Coated Contact Lenses by Electrochemical Impedance Spectroscopy
C. M. Weikart, Y. Matsuzawa, L. Winterton, H. K. Yasuda
Published online 13 December 2000

608 Low-Temperature Synthesis, Structure, and Bioactivity of Gel-Derived Glasses in the Binary CaO-SiO_2 System
P. Saravanapavan and L. L. Hench
Published online 13 December 2000

619 Bone Bonding in Sintered Hydroxyapatite Combined with a New Synthesized Agent, TAK-778
H. Kato, S. Nishiguchi, T. Furukawa, M. Neo, K. Kawanabe, K. Saito, and T. Nakamura
Published online 13 December 2000

632 Author Index to Volume 54

637 Subject Index to Volume 54

I Volume 54 Contents